



3rd Joint Workshop on New Technologies for Computer/Robot Assisted Surgery

11-12-13 September 2013, Verona, Italy

September 11

8:45	9:00	registration
9:00	9:15	Word of Welcome by Prof. Franco Fummi, head of Computer Science Department, Univ. Verona
Session 1 : segmentation and registration - D. Stoyanov - L. De Mattos		
9:15	9:30	C. Barbalata and L.S. Mattos. Laryngeal Tumor Classification in Endoscopic Video
9:30	9:45	R. Melo, J. Barreto, G. Falcao. Camera calibration and real-time image distortion correction in medical endoscopy using exchangeable optics
9:45	10:00	M. Ourak, Br. Tamadazte, N. Andreff, C. Pieralli, O. Gaiffe and B. Wacogne. Towards registration of multimodal images of vocal folds based on mutual information
10:00	10:15	M. Allan, S. Ourselin, S. Thompson, D. Hawkes, J. Kelly and D. Stoyanov. Detection and Localization of Instruments in Minimally Invasive Surgery
10:15	10:30	A. Schoob, F. Podszus, D. Kundrat, L. A. Kahrs and T. Ortmaier. Stereoscopic Surface Reconstruction in Minimally Invasive Surgery using Efficient Non-Parametric Image Transforms
10:30	10:50	Coffee break
Session 2: modelling - E. De Momi - S. Giannarou		
10:50	11:05	M. Visentini-Scarzanella and D. Stoyanov. Stereo and Shape-from-Shading Cue Fusion for Dense 3D Reconstruction in Endoscopic Surgery
11:05	11:20	R. Mariën, M. Smoljkic, R. Geenens, M. Roefsaers, J. Vander Sloten, N. Famaey. Mechanical characterization of arterial tissue: Simultaneous confocal imaging and tensile testing
11:20	11:35	P. T. Tran, A. Devreker, G. Smoljkic, H. De Praetere, P. Herijgers, E. Vander Poorten and J. Vander Sloten. Patient-Specific Design of Multi-Component Steerable Catheters
11:35	11:50	C. Shi, S. Giannarou, S. Lee and G-Z Yang. Intravascular Modeling and Navigation for Transcatheter Aortic Valve Implantation
11:50	12:05	G. Smoljkic, C. Gruijthuijsen, E. Vander Poorten and J. Vander Sloten. Towards Intra-operative Use of Catheter Simulation
12:05	14:05	Lunch
Session 3: active guidance & assistance - M. Capiluppi - B. Rosa		
14:05	14:55	keynote Prof G-Z.Yang: Emerging Platforms for Surgical Robots
14:55	15:10	V. Strbac, J. Vander Sloten and N. Famaey. Towards Real-time FE for surgical applications
15:10	15:25	B. Rosa, J. Szewczyk and G. Morel. Precise navigation on soft tissues with an endomicroscopy probe
15:25	15:40	D. Dall'Alba, B. Maris and P. Fiorini. Needle Mounted Navigation System for Free Hand Percutaneous Procedures
15:40	15:55	A. Gijbels, E. Vander Poorten, P. Stalmans and D. Reynaerts. Application of a Robotic Comanipulation and Teleoperation System for Retinal Cannulations
15:55	16:10	D. De Lorenzo, S. Calò, A. Ciullo, M. D. Comparetti, M. Kunze, E. De Momi and G. Ferrigno. Redundancy management of a LWR4+ for safe, collision free, robotic surgical applications, using environmental sensors
16:10	16:30	Coffee break
Session 4: Interfaces & Haptic Feedback - T. Haidegger - E. Vander Poorten		
16:30	16:45	C. Belvedere, S. Tamarri and A. Leardini. Cutting Edge Technology in Computer Assisted Surgery for Total Knee Replacement. State-of-the-art of techniques and relevant results.
16:45	17:00	D.E. Barkana, D.G. Duru, A.D. Duru, A. Açık and M.Ozkan. Development and Evaluation of an Interface for Pre-Operative Planning of Cryoablation of a Kidney Tumor
17:00	17:15	G. Barresi, N. Deshpande, L. Mattos, L. Guastini, G. Peretti and D. Caldwell. Usability and Performance: Comparative Evaluation of Surgeon Interfaces in Laser Phonomicrosurgery
17:15	17:30	M. Li, M. Ridzuan, P. Dasgupta and K. Althoefer. Pseudo-Haptic Feedback for Tissue Stiffness Simulation
17:30	17:45	J. Konstantinova, M. Li, P. Dasgupta, K. Althoefer and T. Nanayakkara. Palpation Strategies for Artificial Soft Tissue Examination
17:45	18:00	S.P. Diez, E. Vander Poorten, B. Willaert and D. Reynaerts. Spatially distributed stiffness rendering system for handsfree palpation

WELCOME COCKTAIL – 18.30 – RESTAURANT N.5, WALKING DISTANCE FROM ACCADEMIA





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September 12

8:45	9:00	Registration
9:00	9:05	Word of Welcome
Session 5 - teleoperation and training - B. Herman - S. Speidel		
9:05	9:20	F. Despinoy, J. Leon-Torres, M. Vitrani and B. Herman. Toward remote teleoperation with eye and hand: a first experimental study
9:20	9:35	S.Jordán, Á. Takács, I. Rudas and T. Haidegger. Modelling and Control Framework for Robotic Telesurgery
9:35	9:50	M. De Piccoli, F. Visentin, D. Zerbato and P. Fiorini. 3D vessel modeling for diagnosis and training
9:50	10:05	K. Baeck, P. Lopes, G. Biglino, C. Capelli and P. Verschuere. State of the art in 3D printing of compliant cardiovascular models: HeartPrint - Material characterization of HeartPrint models and comparison with arterial tissue properties
10:05	10:20	S. Suwelack, S. Röhl, S. Bodenstedt, D. Katic, H. Kennigot, B. Müller-Stich, A. Wekerle, M. Wagner, J. Wünscher, R. Dillmann and S. Speidel. Biomechanical simulations, soft tissue phantoms and open data - validating and benchmarking systems for computer assisted minimally invasive surgery
10:20	10:40	coffee break
Session 6: novel robotic hardware (1) – M. Capiluppi - M. Sette		
10:40	10:55	D. Zerbato, L. Vezzano, L. Grespan, L. Gasperotti and P. Fiorini. Accurate and Low Cost Training System for Robotic Surgery
10:55	11:10	A. van Poelgeest, D. Kaltenbacher, T. Cuntz, C. Spindler, A. Sanagoo, J. Schaechtele and A. Rothfuss. Systems for handheld surgical robotics and man-machine OR teams
11:10	11:25	S. Tognarelli, P. Miloro, A. Verbeni, M. Mura, A. Cafarelli, G. Ciuti, P. Dario and A. Menciassi. Low invasive therapy under robotic guidance in the vascular district: a case study
11:25	11:40	M. Zenati. Medrobotics' FLEX Robotic System
11:40	11:55	A. Jiang, T. Nanayakkara, P. Dasgupta and K. Althoefer. Stiffness-controllable octopus-like robot arm for minimally invasive surgery
11:55	13:55	lunch
Session 7: novel robotic hardware (2) - K. Althoefer - G. Ferrigno		
13:55	14:00	intro
14:00	14:50	keynote speech : Anne Bajart 'EU-funded research programme in robotics: achievements and perspectives'
14:50	15:05	T. Ranzani, M. Cianchetti, G. Gerboni, I. De Falco, G. Petroni and A. Menciassi. A modular soft manipulator with variable stiffness
15:05	15:20	G. Lucarini, A. Tozzi, C. Bruni, A. Vallesi, E. Gaggini, G. Ciuti and A. Menciassi. Electromagnetic design for capsule endoscope navigation: a preliminary study
15:20	15:35	A. Sanchez, C. Liu, N. Zemit, P. Pognet and E. Dombre. Control of meso-robots for endoluminal surgery
15:35	15:50	I.S.M. Khalil, V. Magdanz, S. Sanchez, O.G. Schmidt, L. Abelmann, and S.Misra. Magnetic Control of Potential Microrobotic Drug Delivery Systems
15:50	16:05	V. Meiser and D. Seatovic. System integration: A comparison of the SCATH and the CASCADE system architecture
16:05	16:25	coffee break
Session 8: visionary works and systems - S. Misra – A. Menciassi		
16:25	16:40	S. Weber, P. Brett, M. Caversaccio, D. Proops, B. Bell, X. Du, N. Gerber, T. Williamson, C. Coulson and A. Reid. Minimally invasive, robot assisted cochlear implantation
16:40	16:55	L.S. Mattos and N. Andreff. The μ RALP Project: New Technologies and Systems for Robot-Assisted Laser Phonomicrosurgery
16:55	17:10	H. Wurdemann, E. Secco, T. Nanayakkara, K. Althoefer, K. Lis, L. Mucha, K. Rohr and Z. Nawrat. Mapping Tactile Information of a Soft Manipulator to a Haptic Sleeve in RMIS
17:10	18:00	round table

CONFERENCE DINNER AT GARDIA LAKE IN LA LOGGIA RAMBALDI – BUS DEPARTS AT 18.30 FROM ACCADEMIA.





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September 13

8:45	9:00	Registration
9:00	9:05	Word of Welcome
session 9: roadmapping - M. Zenati - E. Vander Poorten		
9:05	9:20	J. Vander Sloten - Image-based Engineering in Surgery
9:20	9:35	M. Zenati and J. Maron. Communication and Teamwork Failure as a Barrier to Robotic Surgical Safety
9:35	9:50	B. Davies. The ACROBOT technology: a model for robotic surgery?
9:50	10:05	G. Ferrigno. ACTIVE: Active Constraints Technologies for Ill defined and Volatile Environments.
10:05	10:25	coffee break
session 10: cognitive surgical robotics - Y. Kassahun - A. Van Poelgeest		
10:25	10:40	J. Maron and M. Zenati. Framework for Managing Cognitive Load in a Data-Rich Robotic Operating Room
10:40	10:55	E. De Momi, R. Perrone, L. Schreiter, J. Raczowsky, F. Boriero, M. Capiluppi and P. Fiorini. EuRoSurge Workflow: From ontology to surgical task execution
10:55	11:10	Y. Kassahun, B. Yu and E. Vander Poorten. Learning Catheter-Aorta Interaction Model Using Joint Probability Densities
11:10	11:25	L. Fichera, D. Pardo and L. Mattos. The role of artificial cognitive supervision in robot-assisted laser surgery
11:25	11:40	M. Bonfe, N. Preda, C. Secchi, F. Ferraguti, R. Muradore, L. Repele, G. Lorenzi, L. Gasperotti and P. Fiorini. Automated Surgical Task Execution: the Next Step in Robotic Surgery
11:40	13:40	lunch
session 11: roadmapping & Multi-Annual Research agenda - P. Fiorini - J. Vander Sloten		
13:40	14:30	keynote speech: Christophe Leroux 'Opportunities in the European Robotics Public Private Partnership (PPP) and the Topic Group on Healthcare robotics'
14:30	15:30	round table
15:30	15:50	coffee break
15:50	16:50	round table
16:50	16:55	closure of workshop

